

What is claimed is:

1. In a belt device passed over a plurality of rollers one of which is adjacent to a heat source, a temperature of part of a belt moving in the vicinity of said heat source varies little relative to a temperature of the other part of said belt.

2. The belt device as claimed in claim 1, wherein said belt is passed over said plurality of rollers, and one of said plurality of rollers adjacent to the heat source is configured to obstruct heat transfer to said belt.

3. The belt device as claimed in claim 1, wherein said roller adjacent to the heat source is lower in thermal conductivity than metal.

4. The belt device as claimed in claim 1, wherein said roller adjacent to the heat source comprises belt passing portions over which said belt is passed in an axial direction of said roller and heat non-conductive portions not conducting heat.

5. The belt device as claimed in claim 4, wherein said heat non-conductive portions are lower in thermal conductivity than metal.

6. The belt device as claimed in claim 4, wherein said belt passing portions comprise metallic surfaces capable of serving as optical reflecting surfaces.

7. The belt device as claimed in claim 4, wherein

said heat non-conductive portions each comprise a flexible member capable of contacting said belt.

8. The belt device as claimed in claim 4, wherein said heat non-conductive portions each comprise bristles implanted and capable of contacting said belt.

9. The belt device as claimed in claim 8, wherein said bristles have a density of  $1,000/\text{cm}^2$  to  $50,000/\text{cm}^2$ .

10. The belt device as claimed in claim 8, wherein said bristles have a height equal to an outside diameter of said belt passing portions or great enough for said bristles to contact said belt.

11. The belt device as claimed in claim 4, wherein said heat non-conductive portions are formed at positions other than end portions of said roller in an axial direction of said roller.

12. The belt device as claimed in claim 4, wherein said heat non-conductive portions are formed of an electrically conductive material.

13. The belt device as claimed in claim 12, wherein said heat non-conductive portions have a specific resistance of  $10^{-3} \Omega\cdot\text{cm}$  to  $10^{-1} \Omega\cdot\text{cm}$ .

14. In an image forming apparatus using a belt device, said belt device is passed over a plurality of rollers one of which is adjacent to a heat source, and a temperature of part of a belt moving in the vicinity of said heat source

varies little relative to a temperature of the other part of said belt.

15. The apparatus as claimed in claim 14, wherein said belt constitutes an image transfer body, and one of said rollers over which said belt is passed is adjacent to a fixing unit including a heat source.

16. The apparatus as claimed in claim 15, wherein a plurality of image carriers are arranged side by side and allow respective latent images corresponding to different colors to be formed thereon and developed by toners complementary in color to said latent images to thereby form corresponding toner images, said belt, conveying a sheet electrostatically adhering to said belt, moves via said plurality of image carriers to thereby cause said toner images to be sequentially transferred to said sheet one above the other and conveys said sheet further to a fixing unit.

17. The apparatus as claimed in claim 14, wherein said belt constitutes a photoconductive element, and one of rollers over which said belt is passed is adjacent to the fixing device including a heat source.

18. In a belt device comprising a belt passed over a plurality of rollers and capable of moving said belt via said plurality of rollers, bristles are implanted on a circumferential surface of any one of said plurality of

rollers except for belt passing portions over which said belt is passed, and said bristles are arranged in an axial direction of said roller and each are inclined relative to a line tangential to said circumferential surface.

19. The belt device as claimed in claim 18, wherein said bristles are implanted on at least one roller located at a position where a temperature is high in a temperature distribution in a direction of movement of said belt.

20. The belt device as claimed in claim 18, wherein said bristles are inclined in a direction in which said bristles fall down rearward in a direction of rotation of said roller.

21. The belt device as claimed in claim 18, wherein said bristles are inclined by a same angle.

22. The belt device as claimed in claim 18, wherein a distance between an axis of said roller and tips of said bristles differs, in the axial direction of said roller, from positions adjoining said belt passing portions to the other portions.

23. The belt device as claimed in claim 22, wherein the tips of said bristles at the positions adjacent to said belt passing portions are positioned radially outward of said belt passing portions.

24. The belt device as claimed in claim 22, wherein said bristles have a same length as each other.

25. The belt device as claimed in claim 18, wherein positions of said roller, adjoining said belt passing portions in the axial direction of said roller, have an outside diameter smaller than said belt passing portions, but larger than the other positions.

26. The belt device as claimed in claim 18, wherein said bristles are implanted in a range of said roller other than end portions in the axial direction of said roller.

27. The belt device as claimed in claim 18, wherein said bristles are lower in thermal conductivity than a material forming said roller.

28. The belt device as claimed in claim 18, wherein said bristles are electrically conductive.

29. The belt device as claimed in claim 18, wherein said bristles are formed of a material having a specific resistance of  $10^{-3} \Omega \cdot \text{cm}^2$  to  $10^{-1} \Omega \cdot \text{cm}^2$ .

30. The belt device as claimed in claim 18, wherein said bristles have a density of 1,000/cm<sup>2</sup> to 50,000/cm<sup>2</sup>.

31. The belt device as claimed in claim 18, wherein said belt passing portions of said roller comprise metallic surfaces capable of serving as optical reflecting surfaces.

32. In an image forming apparatus using a belt device, said belt device comprises a belt passed over a plurality of rollers and is capable of moving said belt via said

plurality of rollers, bristles are implanted on a circumferential surface of any one of said plurality of rollers except for belt passing portions over which said belt is passed, and said bristles are arranged in an axial direction of said roller and each are inclined relative to a line tangential to said circumferential surface.

33. The apparatus as claimed in claim 32, wherein said belt constitutes an image transfer body, and one of said rollers over which said belt is passed is adjacent to a fixing device including a heat source.

34. The apparatus as claimed in claim 32, wherein said belt constitutes an image carrier, and one of said rollers over which said belt is passed is adjacent to a fixing device including a heat source.

35. The apparatus as claimed in claim 32, wherein said belt is used for a color image forming process capable of forming a plurality of images of different colors.

36. The apparatus as claimed in claim 35, wherein said belt is used for a plurality of tandem image forming sections arranged side by side and constitutes an image transfer belt having a surface movable via said plurality of tandem image forming sections, whereby images of different colors formed by said image forming sections are transferred to said surface of said image transfer belt or a recording sheet, electrostatically adhering to said

belt, one above the other.

37. In a belt device passed over a plurality of rollers one of which is adjacent to a heat source, a temperature of part of a belt, moving in the vicinity of said heat source, is made identical with a temperature of the other part in a short period of time.

38. The belt device as claimed in claim 37, wherein said belt is passed over a plurality of rollers, one of said plurality of rollers adjacent to the heat source radiates a greater amount of heat than the other rollers.

39. The belt device as claimed in claim 37, wherein the temperature of said roller adjacent to the heat roller drops in a shorter period of time than a solid metallic roller.

40. The belt device as claimed in claim 39, wherein said roller adjacent to the heat source comprises a hollow roller.

41. The belt device as claimed in claim 39, wherein when said roller adjacent the heat roller comprises a hollow roller, a wall thickness of said roller is 5 mm or below.

42. The belt device as claimed in claim 39, wherein when said roller adjacent to the heat roller comprises a hollow roller, at least one radially extending rib is positioned inside said hollow roller.

43. The belt device as claimed in claim 39, wherein said roller adjacent to the heat roller is formed of a good conductor selected from at least aluminum, stainless steel (SUS) and steel.

44. In an image forming apparatus using a belt device, said belt device is passed over a plurality of rollers one of which is adjacent to a heat source, and a temperature of part of a belt, moving in the vicinity of said heat source, is made identical with a temperature of the other part in a short period of time.

45. The apparatus as claimed in claim 44, wherein said belt constitutes an image transfer body, and one of said rollers over which said belt is passed is adjacent to a fixing unit including a heat source.

46. The apparatus as claimed in claim 45, wherein said belt constitutes a photoconductive element, and one of rollers over which said belt is passed is adjacent to the fixing device including a heat source.

47. The apparatus as claimed in claim 45, wherein a plurality of image carriers are arranged side by side and allow respective latent images corresponding to different colors to be formed thereon and developed by toners complementary in color to said latent images to thereby form corresponding toner images, said belt, conveying a sheet electrostatically adhered to said belt,



moves via said plurality of image carriers to thereby cause said toner images to be sequentially transferred to said belt one above the other and conveys said sheet further to a fixing unit.

48. The apparatus as claimed in claim 44, wherein the sheet starts being conveyed toward an image transfer position after the temperature of said belt has been made equal at a position where said belt moves in the vicinity of the heat source and the other positions.

49. The apparatus as claimed in claim 44, wherein control for correcting a shift of an image position starts being executed after the temperature of said belt has been made equal at a position where said belt moves in the vicinity of the heat source and the other positions.